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MENTAL EXAMINATIONS OF SCHOOL CHILDREN

THE SCHOOL AS A FACTOR IN THE MENTAL HYGIENE OF RURAL COMMUNITIES

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MENTAL EXAMINATIONS OF SCHOOL CHILDREN.

THE SCHOOL AS A FACTOR IN THE MENTAL HYGIENE OF RURAL COMMUNITIES.[1]

By Taliaferro Clark, Surgeon, United States Public Health Service.

In the course of investigations of school hygiene by the United States Public Health Service during the past year and a half, mental examinations have been made of over 18,000 school children in four States. As nearly all of the children examined resided in rural districts, these studies relate more particularly to the rural school child.

Retardation.—The problems of mental hygiene observed, while closely related to those existing in urban communities, present distinct characteristics. The most outstanding of these problems are those connected with the large number of mentally retarded children observed.

While all the collected data bearing on mental retardation have not been compiled, the studies being still in progress, compilations have been made in the case of the rural school population of one entire county.[2] The average attendance in the rural schools of this county was 2,512. The number of children who were examined mentally was 2,185. The results of these examinations, therefore, should be representative of the district in question. Of these 2,185 children, 8.7 per cent were retarded as follows: Children of 6 and 7 7 years of age, retarded two years; 8 and 9 years of age, two and three years; 10 and 11 years of age, three and four years; 14 and 15 years of age, five years; and 16 to 17 years of age, retarded six years mentally.

The average retardation of these children in school work as graded by teachers was 1.28 years for girls and 1.5 years for boys. In other words, the total retardation in school work amounted to 268.27 school years.

Furthermore, intensive studies were made of the physical condition and school environment of these children. The following physical defects were recorded: Of the retarded girls, 35.5 per cent were undersized, 58.8 per cent had noticeable visual defects, 26.4 per cent had defects of hearing, 17.6 per cent had two or more defective teeth, 2.9 per cent had enlarged tonsils, and an additional 1.7 per cent had enlarged tonsils associated with adenoids.

Of the boys, 38 per cent were undersized, 47 per cent had noticeable defects of vision (of which number 19 had confused color sense), 34 per cent had defective hearing, 17 per cent had defective teeth, and 6 per cent had adenoids and enlarged tonsils.

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[1] Read before the Section on Feeble-mindedness and Insanity, National Conference of Charities and Corrections, Indianapolis, Ind., May 15, 1916. Reprint from the Public Health Reports, vol. 31, No. 34, Aug. 25, 1916, pp. 2265–2271.

[2] Public Health Bulletin No. 77.

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These children were not feeble-minded. A clear distinction must be made between these two conditions for a proper appreciation of the rôle of retardation in mental deficiency. The rate of intellectual development varies at different age periods. In very young children the rate is relatively rapid. In fact, it can be easily observed without special methods. As the child grows older, however, the progress of intellectual development from year to year is less easily detected, so that between the ages of 12 and 13 it can not be recognized. In the case of older children, therefore, the correlation of retardation and permanent mental deficiency is relatively easy. In other words, the greater the discrepancy obtaining between the chronological and actual mental ages, the more definitely it may be asserted that the child is feeble-minded and that his intelligence will never be greater than that of a child when he becomes an adult. This is due to the improbability that a great amount of retardation will be overcome in a short time intervening before maturity and at a lessened rate of mental progress.

In the case of very young children, however, one of two things may take place. First, the retardation may be temporary only. The annual increments of intellectual development may be so great as to overcome the retardation in the longer period which must elapse before maturity. On the other hand, mental development may remain stationary or develop so slowly that the individual still presents the mentality of a child when the adult stage is reached.

Rural children are exposed to influences causing retardation that are quite distinct from those affecting children in urban communities. Broadly speaking, these influences may be considered from the standpoint of (1) sanitation and (2) education.

(1) School surveys have shown that 12 per cent of the population in certain sections of our country is afflicted with trachoma. The amount of mental retardation observed in these sections is very great, due to the fact that the damage to vision caused by this disease hampers intellectual training.

It is known that there are many thousands of people suffering from hookworm disease in this country. It is common experience that children suffering from hookworm infection show evidences of mental retardation.

Furthermore, mental retardation is frequently associated with certain nutritional disorders. Of particular interest in this connection is pellagra, which is a nutritional disorder due to an improperly arranged dietary. It is estimated that there are 75,000 people in this country who are suffering from pellagra, a large proportion of whom are children. Not only is this disease associated with mental retardation, but from 4 to 10 per cent of pellagrins eventually become insane.

Finally, certain physical defects, especially those involving the organs of sight and hearing, operate to cause retardation. Failure to provide for the health supervision of the school children, which is so common in rural communities, is largely responsible for the continuance of a number of these defects, which react injuriously on mental functioning.

(2) Of the educational influences operating to cause mental retardation may be mentioned the school environment, the sanitation of the school building, the arrangement and equipment of classrooms, the maintenance of too large a number of children in different grades in one-room schools, and faulty teaching methods.

Eighty-nine per cent of the rural schools inspected in the county previously referred to were one-story structures, and 57 per cent were more than 20 years old. Adjustable desks were found in only 9.5 per cent of the classrooms, 41.1 per cent of the classrooms were heated by closed stoves, 27.6 per cent were without aids to ventilation, and the illumination was from the right direction in only 42.2 per cent.

Finally, retardation is itself a cause of retardation. The home environment and the mental attitude of parents who are themselves retarded are potent factors in the mental retardation of their children. Furthermore, the presence of a number of retarded children in a class exerts a hampering effect on the mental advancement of the class as a whole. This condition is very common in rural schools, due to the absence of facilities for the formation of special classes for the training of children in need of individualized instruction.

Mention has been made of the numbers of retarded individuals observed in communities where certain endemic diseases and nutritional disorders are common. When a child retarded by hookworm disease has been cured, he has promptly passed to higher grade. Again, instances are not lacking to show that the longer the infection persists in these cases the more permanent the effects of retardation are likely to be from the standpoint of both physical and mental development. It is clear, therefore, that constitutional conditions operating to produce mental retardation, unless removed, may finally bring about permanent mental impairment.

Of more general interest, however, because of the more extended field of operation, is the rôle of retardation from causes not clearly understood in inducing feeble-mindedness. The investigations of Holley[1] show that the tendency is for men and women to marry those who are approximately of the same educational level. The intermarriage of men and women who have become discouraged through retardation and have quit school with but meager educational attain-

[1] The Relationship between Persistence in School and Home Conditions. Charles Elmer Holley. The Fifteenth Yearbook of the National Society for the Study of Education.

ments is quite common. The poor judgment so noticeable in individuals of this type, the weakened will, and the ready yielding to desires frequently bring about unfortunate marriage selections, the formation of vicious and intemperate habits, and increase in venereal affections, influences that are largely responsible for social and economic conditions provocative of feeble-mindedness.

Feeble-mindedness.—The percentage of feeble-minded persons in the general population is not known. It has been placed as high as 4 per cent by some observers. In this respect each community is a problem in itself. This is because of the modification of hereditary and environmental influences by immigration and geographical location.

The percentage of feeble-mindedness observed in the course of the investigations of the Public Health Service varied from 0.3 to 1.1 per cent, according to locality. Underphysical development was not found frequently associated with exceptional retardation—feeble-mindedness. In the case of feeble-minded, 57 per cent of the girls and 42.8 per cent of the boys were above the average physical development determined for the county. Furthermore, 42.8 per cent of the girls had visual defects, 14.2 per cent had defects of hearing, and 2.9 per cent had enlarged tonsils. Of the boys, 34.2 per cent had visual defects, 57.1 per cent defects of hearing, and 7.1 per cent enlarged tonsils. These observations seem more in accord with what might be expected in the case of feeble-minded children. It is natural to suppose that these children simply vegetate—i. e., grow rapidly in a fairly good environment.

Constitutional inferiority.—A boy was observed in a rural school who was noisy, vain, said to be cruel to animals, inclined to impose on younger children, and given to lying and petty pilfering. Children of this type are termed by psychologists "constitutionally inferior" and are of average intelligence. Quite early in life, however, they give evidences of a perverted moral sense that makes them potential criminals in a bad environment. The number of such children found in any one community is not large; nevertheless, they are found in numbers sufficient to make them a serious problem from an educational and sociological standpoint. Especially is this true of rural communities where compulsory school attendance is required by law but where no provision is made for the care and training of defective children.

Owing to the tendency to imitation exhibited by young children, the compulsory school attendance of the constitutionally inferior is a menace to the morality of the community far greater than seems to be warranted by their number. The presence of such children in the general classes is undesirable, yet it is unwise to throw them back on the community without the hope of future training or

restraint. To do so will but crystallize vicious tendencies which make of them a menace to society. The school offers that ready opportunity for the early recognition of children of this type which is so desirable for the successful application of necessary training methods.

Insanity and epilepsy.—During our investigations several insane children and a number of others with a marked psychopathic tendency have been noted. The occurrence of insanity in children has received but little recognition until within comparatively recent years. The early recognition of psychopathic tendencies is of vast importance from the standpoint of mental hygiene. It must be remembered that children who exhibit these tendencies have sick minds, just as other children have sick bodies, which require appropriate treatment. Ultimate recovery in cases of this kind depends largely on the prompt recognition of symptoms and early application of remedial measures. Continued studies of this character among school children are demanded to show the necessity of this form of health supervision for the protection of the mental health of communities.

An appreciable number of epileptic children have been observed in the course of these surveys of rural schools. The epileptic school child requires careful supervision because of the not infrequent occurrence of temporary mental disturbances in close association with an attack, during which serious bodily injury may be done to other children. Here, again, rural districts are sadly handicapped by the absence of medical school inspections and facilities for the care of epileptic children.

Our investigations have demonstrated the value of the school as an instrument to promote the mental health of rural communities, and have indicated a number of ways in which it may be utilized for this purpose. Of these may be mentioned measures intended (1) to determine the prevalence of mental deficiency, (2) to promote rural sanitation, (3) to train the individual child in the formation of correct habits.

(1) Our experience has shown that it is necessary to confront the average rural community with a specific problem before the cooperation of the whole community can be obtained in the application of measures intended to meet a particular situation. It is of prime importance, therefore, to determine the number of mental defectives in a given community. Because of the close association between the home and the school, a mental examination of school children is the most practical means by which the prevalence of mental deficiency may be determined.

It is very desirable in this connection, however, to adopt uniform methods of procedure. For example, the considerable variation in the percentage of feeble-mindedness in the general population, as given

by different observers, is too great to be accounted for by differences in local influences. These variations are due, in large part, to (*a*) the absence of a definite recognized feeble-minded "complex" and (*b*) the need of practical uniform tests of certain mental functions.

The proper classifications of persons who are patently feeble-minded is not difficult. It is a far different proposition in border-line cases, however, to say just when retardation ceases and feeble-mindedness begins. There is need for far greater diagnostic precision in these cases than obtains under present conditions to bring about uniform results. As it is, the classification of a number of border-line cases depends largely on the personal equation and experience of individual observers.

Furthermore, our investigations have shown the desirability of employing psychologists having biological training to conduct examinations of this character. In studies of mental deficiency a distinction must be made between acquired mental defects and those that are transmissible. For example, children who become defectives through traumatism, severe organic lesions, and more or less prolonged action of certain infections and improper dietaries are not defective in the true meaning of the term.

(2) Not only does the continued presence of endemic diseases entail great economic losses to communities where they prevail by reducing the physical efficiency of a great part of the population, but they are also accompanied by a similar reduction in mental efficiency. These harmful influences continue to exist because of the general lack of information so common in rural communities concerning their cause and prevention. In a number of instances it is a difficult matter to secure the cooperation of the adult population, which is set and fixed in its habits, in measures intended to improve the community health. Health supervision of school children not only gives valuable information concerning the prevalence of these conditions, but it also exercises an educational effect on the rising generation, through whom the sanitary redemption of these communities is largely to be brought about.

The control of hookworm disease is a matter of personal hygiene and community sanitation. The school is an effective agent for the demonstration of measures for its control, and in addition offers exceptional facilities for the early detection of hookworm sufferers and their prompt cure, both of which are necessary to prevent permanent mental impairment.

Mention has been made of the effect of poor nutrition on mental development in connection with pellagra. The ill effects of faulty feeding in infancy and early childhood on the physical and mental health are well recognized. It was not discovered until recently, however, that food value means much more than its estimation in terms of calories. It is now known that a diet sufficient to supply the

demands of normal metabolism must contain a due proportion of what are called "vitamines."

Vitamines occur in very small amounts and in varying proportions in different foodstuffs, a fact which must be taken into consideration in arranging a dietary for the cure and prevention of nutritional disorders. The mental hygienist is deeply interested in the school, therefore, as a factor in the prevention of these disorders through the teaching of food preparation and food values and the extension of this knowledge to the home.

(3) It has been asserted that a large percentage of school children are predisposed to mental "complexes" usually found associated with what are now considered functional disorders of the mind. Incorrect habits of thought and feeling in the child, unless corrected, are possible causes of the failure of the child later in life properly to adjust himself to his environment. We have observed in rural communities children who present one or more of the symptoms usually enumerated as forming a mental "complex" in such numbers that grave doubts are raised as to the correctness of this general form of a posteriori reasoning. Certainly there is need of something other than indefinite statements regarding the relation between personality and psychosis. The most practical plan for supplying this want, I believe, is the study of personality in developing school children, somewhat after the manner outlined by Hoch.[1] Data so collected and filed for future reference will be of the greatest value in the correlation of certain mental traits and psychoses appearing later in life.

Studies of this character also serve to draw attention to the milder forms of abnormality which, when neglected, crystallize into faulty habits productive of grave consequences to the mental health.

To be effective the teaching of correct "habit formation" should begin in the home at an age earlier than that represented by the school period. Unfortunately, this is not of general application in most rural districts, where the tendency to the formation of incorrect habits is largely due to the comparative isolation of families and the lack of contact with the broadening influences of the outside world. The school, therefore, stands in a very definite relation to such communities in supplying the training for the prevention of faulty habits which so materially reduce individual efficiency.

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[1] A Guide to the Descriptive Study of the Personality. Dr. August Hoch and Dr. George S. Amsden, State Hospital Bulletin (N. Y.), November, 1913.

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